EXFOR News (November 2022)

New experimental data available from Nuclear Reaction Data Centres

EXFOR [1] is a world-wide data library for experimental neutron, charged-particle and photon induced reaction data compiled by the International Network of the Nuclear Reaction Data Centres (NRDC)[a] co-ordinated by the IAEA Nuclear Data Section. Regularly updated web retrieval databases are available at IAEA-NDS as well as NNDC, NEADB, JCPRG and CDFE.

This News lists newly created EXFOR entries as well as revised EXFOR entries where new data subentries are added. Entries from articles pubslished in past 10 years are flagged by asterisks (*). Please send an email to the NRDC Coordinator (n.otsuka@iaea.org) for inclusion in the EXFOR News distribution list as well as any question on EXFOR.

[1] N. Otuka, E. Dupont, V. Semkova, B. Pritychenko et al., Nucl.Data.Sheets **120**(2014)272.

Quantity codes

ALF	α-value ($\sigma_{\rm capt}/\sigma_{\rm fis}$)	KE	Kinetic energy
AMP	Scattering length	INT	Cross section integral over incident energy
CHG	Fragment charge	KER	Kerma factor
CS	Cross section	MAS	Fragment mass
CSP	Partial cross section	MFQ	Differential fission neutron multiplicity
CST	Temperature dependent cross section	MLT	Multiplicity
D3A	Triple differential $d\Omega_1/d\Omega_2/dE'$	NQ	Nuclear quantity
D3E	Triple differential $d\Omega/dE'_1/dE'_2$	NU	Fission neutron multiplicity $\bar{\nu}$
D4A	Quadruple diff. $d\Omega_1/d\Omega_2/dE'_1/dE'_2$	NUD	Delayed fission neutron multiplicity $\bar{\nu_d}$
DA	Differential $d/d\Omega$	POL	Polarization
DAA	Double differential $d\Omega_1/d\Omega_2$	POD	Differential polarization
DAE	Double differential $d\Omega/dE'$	PY	Product yield (other than fission)
DAP	Partial differential $d/d\Omega$	RI	Resonance integral
DAT	Temperature-dependent Legendre coefficient	RP	Resonance parameter
DE	Differential d/dE'	RR	Reaction rate
DEP	Energy spectrum for specific group	SIF	Self indication
DP	Diff. by linear momentum of outgoing part.	SPC	Gamma spectrum
DT	Diff. by 4-momentum transfer squared	TSL	Thermal scattering
ETA	η-value = $\bar{\nu}\sigma_{\rm fis}/(\sigma_{\rm capt}+\sigma_{\rm fis})$	TT	Thick target yield
EVL	Evaluation	TTD	Differential thick target yield, $d/d\Omega$
FY	Fission product yield	TTP	Partial thick target yield

Special codes in outgoing particle field

abs	Absorption	fus	Fusion	sct	Scattering	tot	Total
el	Elastic	inel	Inelastic	tcx	Total charge changing		
fis	Fission	non	Nonelastic	ths	Thermal scattering		

Special codes in incident energy field

Fast	Fast reactor spectrum average	Maxw	Maxwellian spectrum average
Fiss	Fission spectrum average	Spont	Spontaneous (for fission)

[a] NNDC (USA), NEADB (France), NDS (Austria), CJD (Russia), CNDC (China), ATOMKI (Hungary), NDPCI (India), JAEA (Japan), JCPRG (Japan), KAERI (Korea), CDFE (Russia), CNPD (Russia), UkrNDC (Ukraine)

1 Hydrogen 1

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot		CS	1USAUI	9.0+05	9.0+05	Jour	PR,58,89(1)	40	W.E.Good+	14785

1 Hydrogen 2

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{24}Na,p	^{25}Na	DAP	1USAFSU	8.6+07	8.6+07	Jour	PR/C,104,065807	21	N.Gerken+	C2703
*	^{20}Mg,el	^{2}H	?	1CANTMF	1.7+08	1.7+08	Jour	PR/C,99,021301	19	J.S.Randhawa+	C2726
*	^{20}Mg,inel	^{2}H	?	1CANTMF	1.7+08	1.7+08	Jour	PR/C,99,021301	19	J.S.Randhawa+	C2726

5 Boron 10

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,α	^{7}Be	DA	1USAWIS	3.3+06	3.3+06	Jour	PR,87,206(L10)	52	D.S.Craig+	C2727
	p,α	^{7}Be	DAP	1USAWIS	3.3+06	3.3+06	Jour	PR,87,206(L10)	52	D.S.Craig+	C2727
	p,^{3}He	^{8}Be	DA	1USAWIS	3.4+06	3.4+06	Jour	PR,87,206(L10)	52	D.S.Craig+	C2727
	p,inel	^{10}B	DA	1USAWIS	2.2+06	2.2+06	Jour	PR,87,206(L10)	52	D.S.Craig+	C2727

6 Carbon

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot		CS	1USAUI	9.0+05	9.0+05	Jour	PR,58,89(1)	40	W.E.Good+	14785
	p,x	Many	TT	1USABRK	3.3+08	3.3+08	Jour	PR,87,207(L13)	52	W.H.Barkas+	C2729

7 Nitrogen 15

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ	^{16}N	CS	1CANCRC	2.5-02	2.5-02	Jour	PR,87,(Q3),215	52	A.J.Ferguson+	14780

8 Oxygen 16

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	d,α	^{14}N	DA	1USAWIS	8.9+05	8.9+05	Jour	PR,87,206(L10)	52	D.S.Craig+	C2727
*	^{36}Ar,fus		CS	1USAMSU	2.4+07	3.0+07	Jour	PR/C,104,L041601	21	Varinderjitsingh+	C2698
*	^{44}Ar,fus		CS	1USAMSU	2.4+07	2.9+07	Jour	PR/C,104,L041601	21	Varinderjitsingh+	C2698

*	^{39}K,fus		CS	1USAMSU	2.4+07	3.3+07	Jour	PR/C,104,L041601	21	Varinderjitsingh+	C2698
*	^{45}K,fus		CS	1USAMSU	2.3+07	3.0+07	Jour	PR/C,104,L041601	21	Varinderjitsingh+	C2698
*	^{47}K,fus		CS	1USAMSU	2.4+07	2.9+07	Jour	PR/C,104,L041601	21	Varinderjitsingh+	C2698

8 Oxygen 18

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
p,n	^{18}F	CS	1USAWIS	2.5+06	3.7+06	Jour	PR,80,524	50	H.T.Richards+	F0437

10 Neon 22

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,γ	^{23}Ne	CS	1CANCRC	2.5-02	2.5-02	Jour	PR,87,(Q3),215	52	A.J.Ferguson+	14780

11 Sodium 23

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,γ	^{24}Na	MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

13 Aluminium 26

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
* p,γ		RP	1CANTMF	3.7+05	3.7+05	Jour	PRL,128,042701	22	G.Lotay+	C2724
* p,γ		RP	1CANTMF	4.5+05	4.5+05	Jour	PRL,128,042701	22	G.Lotay+	C2724

13 Aluminium 27

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,γ	^{28}Al	MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

17 Chlorine 35

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,γ	^{36}Cl	MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

18 Argon 40

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	p,n	^{40}K	CSP	1USAMSU	3.4+06	3.4+06	Jour	NIM/A,985,164603	21	P.Gastis+	C2704

19 Potassium 41

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	p,n	^{41}Ca	CS	1USAWIS	1.2+06	3.4+06	Jour	PR,80,524	50	H.T.Richards+	F0437

22 Titanium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	γ,x	^{43}Sc	CS	4ARMJER		4.0+07	Jour	ARI,182,110138	22	G.H.Hovhannisyan+	M1035
*	γ,x	^{44}Sc	CS	4ARMJER		4.0+07	Jour	ARI,182,110138	22	G.H.Hovhannisyan+	M1035
*	γ,x	^{46}Sc	CS	4ARMJER		4.0+07	Jour	ARI,182,110138	22	G.H.Hovhannisyan+	M1035
*	γ,x	^{47}Sc	CS	4ARMJER		4.0+07	Jour	ARI,182,110138	22	G.H.Hovhannisyan+	M1035
*	γ,x	^{48}Sc	CS	4ARMJER		4.0+07	Jour	ARI,182,110138	22	G.H.Hovhannisyan+	M1035
*	γ,x	^{45}Ti	CS	4ARMJER		4.0+07	Jour	ARI,182,110138	22	G.H.Hovhannisyan+	M1035
*	p,x	^{42}K	CS	1USABRK	3.8+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{43}K	CS	1USABRK	3.8+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{47}Ca	CS	1USABRK	1.5+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{43}Sc	CS	1USABRK	3.6+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{44}Sc	CS	1USABRK	3.6+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{46}Sc	CS	1USABRK	5.1+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{47}Sc	CS	1USABRK	3.6+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{48}Sc	CS	1USABRK	3.6+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{44}Ti	CS	1USABRK	1.2+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{48}V	CS	1USABRK	1.0+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702

23 Vanadium 51

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ	^{52}V	MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

24 Chromium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ		MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

24 Chromium 53

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ	^{54}Cr	MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

25 Manganese 55

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ	^{56}Mn	MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

26 Iron

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ		MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786
	n,ths	^{nat}Fe	TSL	1USABNL			Jour	PR,87,221(U3)	52	H.Palevsky+	14781

28 Nickel 58

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{6}Li,2p	^{62}Cu	CS	1USAFSU	1.1+07	2.0+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701
*	^{6}Li,fus		CS	1USAFSU	9.6+06	1.9+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701
*	^{6}Li,x	^{58}Ni	CS	1USAFSU	1.1+07	2.0+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701
*	^{6}Li,x	^{59}Ni	CS	1USAFSU	9.6+06	2.0+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701
*	^{6}Li,x	^{59}Cu	CS	1USAFSU	1.0+07	2.0+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701
*	^{6}Li,x	^{60}Cu	CS	1USAFSU	1.1+07	2.0+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701
*	^{6}Li,x	^{61}Cu	CS	1USAFSU	1.1+07	2.0+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701
*	^{6}Li,x	^{62}Zn	CS	1USAFSU	1.1+07	2.0+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701
*	^{7}Li,2p	^{63}Cu	CS	1USAFSU	1.1+07	2.0+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701
*	^{7}Li,fus		CS	1USAFSU	1.0+07	1.8+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701
*	^{7}Li,x	^{59}Ni	CS	1USAFSU	1.0+07	2.0+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701
*	^{7}Li,x	^{60}Ni	CS	1USAFSU	1.1+07	2.0+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701
*	^{7}Li,x	^{60}Cu	CS	1USAFSU	1.1+07	2.0+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701
*	^{7}Li,x	^{62}Cu	CS	1USAFSU	1.1+07	2.0+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701
*	^{7}Li,x	^{62}Zn	CS	1USAFSU	1.3+07	2.0+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701
*	^{7}Li,x	^{63}Zn	CS	1USAFSU	1.1+07	2.0+07	Jour	PR/C,104,054605	21	Vandanatripathi+	C2701

29 Copper

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ		MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786
*	p,x	^{44}Sc	CS	1USABRK	1.5+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{46}Sc	CS	1USABRK	1.2+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{47}Sc	CS	1USABRK	1.6+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702

*	p,x	^{48}V	CS	1USABRK	1.2+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{48}Cr	CS	1USABRK	1.5+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{49}Cr	CS	1USABRK	1.6+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{51}Cr	CS	1USABRK	5.7+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{52}Mn	CS	1USABRK	7.2+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{54}Mn	CS	1USABRK	3.7+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{56}Mn	CS	1USABRK	5.1+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{59}Fe	CS	1USABRK	5.1+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{55}Co	CS	1USABRK	5.1+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{56}Co	CS	1USABRK	5.1+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{57}Co	CS	1USABRK	3.7+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{60}Co	CS	1USABRK	3.7+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{56}Ni	CS	1USABRK	5.1+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{57}Ni	CS	1USABRK	4.2+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{60}Cu	CS	1USABRK	4.2+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{61}Cu	CS	1USABRK	3.7+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{64}Cu	CS	1USABRK	3.7+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{62}Zn	CS	1USABRK	1.0+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{63}Zn	CS	1USABRK	5.5+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{65}Zn	CS	1USABRK	3.7+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702

32 Germanium

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	n,γ		MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	n,γ	^{74}Ge	MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

33 Arsenic 75

	Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
					Min	Max		Ref Vol Page			
	n,γ	^{76}As	MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786
*	p,3n	^{73}Se	CS	1USABRK	3.6+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,4n	^{72}Se	CS	1USABRK	3.6+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,n	^{75}Se	CS	1USABRK	3.6+07	1.5+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{56}Co	CS	1USABRK	1.3+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{57}Co	CS	1USABRK	1.3+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{58}Co	CS	1USABRK	1.0+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{60}Co	CS	1USABRK	1.5+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{65}Zn	CS	1USABRK	1.0+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{69}Zn	CS	1USABRK	1.0+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{66}Ga	CS	1USABRK	7.2+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{67}Ga	CS	1USABRK	5.7+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{68}Ga	CS	1USABRK	1.0+08	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702

*	p,x	^{72}Ga	CS	1USABRK	3.8+07	1.5+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{66}Ge	CS	1USABRK	1.3+08	1.5+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{68}Ge	CS	1USABRK	6.0+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{69}Ge	CS	1USABRK	4.2+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{70}As	CS	1USABRK	5.3+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{71}As	CS	1USABRK	4.2+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{72}As	CS	1USABRK	3.6+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702
*	p,x	^{73}As	CS	1USABRK	3.6+07	1.9+08	Jour	PR/C,104,064615	21	M.B.Fox+	C2702

35 Bromine

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,γ		MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

41 Niobium 93

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,γ	^{94}Nb	MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

47 Silver

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,el	^{nat}Ag	?	1USACOL	6.9-01	1.0+01	Jour	PR,98,565	55	C.Sheer+	13566
n,γ		MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

48 Cadmium 113

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,γ	^{114}Cd	MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

49 Indium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,tot		CS	1USABNL	7.3-02	3.1+01	Jour	PR,87,161	52	V.L.Sailor+	11964

49 Indium 113

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #

n,tot		CS	1USABNL	1.0+00	3.1+01	Jour	PR,87,161	52	V.L.Sailor+	11964

49 Indium 115

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,γ	^{116}In	MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786
n,tot		CS	1USABNL	1.4+00	2.9+01	Jour	PR,87,161	52	V.L.Sailor+	11964

57 Lanthanum 139

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,γ	^{140}La	MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

62 Samarium 149

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,γ	^{150}Sm	MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

63 Europium

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,γ		MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

64 Gadolinium

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,γ		MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

66 Dysprosium 164

Reaction	Product	Quant.	Lab.	Energy (eV)		Type	Documentation	Date	Author	Data #
				Min	Max		Ref Vol Page			
n,γ	^{165}Dy	MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

68 Erbium 167

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
^{3}He,d	^{168}Tm	DAP	1CANMCM	2.4+07	2.4+07	Jour	NP/A,201,486	73	Z.Preibisz+	C2334
α,t	^{168}Tm	DAP	1CANMCM	2.5+07	2.5+07	Jour	NP/A,201,486	73	Z.Preibisz+	C2334

69 Thulium 169

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
d,t	^{168}Tm	DAP	1CANMCM	1.2+07	1.2+07	Jour	NP/A,201,486	73	Z.Preibisz+	C2334
^{3}He,α	^{168}Tm	DAP	1CANMCM	2.4+07	2.4+07	Jour	NP/A,201,486	73	Z.Preibisz+	C2334

72 Hafnium

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,γ		MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786
n,tot		CS	1USAANL	9.0-01	6.0+03	Jour	PR,92,1527	53	L.M.Bollinger+	12108

72 Hafnium 176

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,tot		CS	1USAANL	8.6-01	1.9+01	Jour	PR,92,1527	53	L.M.Bollinger+	12108

72 Hafnium 177

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,γ	^{178}Hf	MLT	1USAANL		5.0+03	Jour	PR,92,1527	53	L.M.Bollinger+	12108
n,tot		CS	1USAANL	7.3-01	1.6+01	Jour	PR,92,1527	53	L.M.Bollinger+	12108

72 Hafnium 178

Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
n,γ	^{179}Hf	MLT	1USAANL		5.0+03	Jour	PR,92,1527	53	L.M.Bollinger+	12108
n,tot		CS	1USAANL	9.8-01	1.6+01	Jour	PR,92,1527	53	L.M.Bollinger+	12108

72 Hafnium 179

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot		CS	1USAANL	5.1+00	1.6+01	Jour	PR,92,1527	53	L.M.Bollinger+	12108

72 Hafnium 180

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,tot		CS	1USAANL	1.0+00	1.6+01	Jour	PR,92,1527	53	L.M.Bollinger+	12108

75 Rhenium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ		MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

77 Iridium

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ		MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

78 Platinum 198

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
*	^{136}Xe,fis	Many	CS	1USAANL	4.5+08	4.5+08	Jour	PR/C,99,044604	19	V.V.Desai+	C2398

79 Gold 197

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ	^{198}Au	MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786

80 Mercury

	Reaction	Product	Quant.	Lab.	Energy (eV) Min	Energy (eV) Max	Type	Documentation Ref Vol Page	Date	Author	Data #
	n,γ		MLT	1USAANL	2.5-02	2.5-02	Jour	PR,79,277	50	C.O.Muehlhause	14786